

We claim:

1. An erectable structure comprising:

an expandable/collapsible bottom apparatus having a bottom internal frame and a flexible bottom cover supported by the bottom internal frame, the bottom apparatus being expandable to form a geometric shape having sides and being collapsible for compact storage;

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an expandable/collapsible top apparatus having a top internal frame and a flexible top cover supported by the top internal frame, the top internal frame having a plurality of radially-extending jointed frame members arranged in an umbrella-simulating arrangement, the jointed frame members being integrally attached to and supported by the bottom internal frame and having joints movable overcenter to an expanded position to form a roof over the geometric shape and movable to a collapsed position in the bottom internal frame for compact storage as a unit with the bottom apparatus.

2. The structure defined in claim 1, wherein the top internal frame is positioned completely within bottom internal frame when in the collapsed position.

3. The structure defined in claim 1, wherein the top and bottom apparatus are interconnected and characteristically do not include loose pieces.

4. The structure defined in claim 1, wherein the top apparatus forms a roof that is dome-shaped and outwardly concave, such that the top apparatus simulates an umbrella shape.

5. The structure defined in claim 1, wherein the top and bottom apparatus have a total height and size comparable to a golf bag when collapsed, such that the structure can be easily stored in a vehicle trunk.

6. The structure defined in claim 1, wherein the jointed frame members of the top apparatus include an intermediate joint that moves overcenter when the top frame is moved between the collapsed and expanded positions.

7. The structure defined in claim 1, wherein the bottom internal frame includes a crisscrossing pattern of pivotally interconnected pairs of frame members that form repeating “X” shapes.

8. The structure defined in claim 1, wherein the top internal frame includes a pattern of pivotally interconnected triplets of frame members that form repeating inverted “Y” shapes.

9. The structure defined in claim 1, wherein the top cover includes a downwardly hanging lower edge and holding arrangement for lifting the lower edge partially upwardly to form windows around the top apparatus.

10. The structure defined in claim 1, wherein holding arrangement includes a drawstring operably connected to the top internal frame and connected to the lower edge.

11. The structure defined in claim 1, wherein the bottom internal frame, when expanded, forms a free-standing, self-supporting structure that is stable, even when positioned on uneven ground.

12. The structure defined in claim 1, wherein the bottom cover of the bottom apparatus includes edges that come together at a corner of the bottom apparatus and that form a door into the structure, the bottom internal frame including bottom frame members having top and bottom ends that are pivotally interconnected to form a scissor frame, at least the top ends of the bottom frame members at the corner being disconnected to form an opening at the door.

13. The structure defined in claim 1, including a carrying sleeve shaped to telescopingly receive and hold the erectable structure when collapsed, the sleeve including a shoulder strap to facilitate carriage of the structure.

14. The structure defined in claim 1, wherein the bottom internal frame includes bottom frame members and further includes stake pivotally attached to one of the bottom frame

members and the bottom cover, the stakes being movable between a use position oriented toward a ground surface and a storage position oriented away from the ground surface, and including a holder for holding the stakes in the storage position.

15. The structure defined in claim 1, wherein the bottom cover has a bottom edge for contacting a ground surface and the bottom internal frame has bottom frame members with ground-engaging ends, and wherein the top and bottom apparatus are constructed so that nothing other than the bottom edge and the ground-engaging ends contact the ground surface during erection, use, collapsing, and carrying the erectable structure.

16. The structure defined in claim 1, wherein the top internal frame includes peak frame members pivotally interconnected to each other to form a peak.

17. The structure defined in claim 16, wherein the top internal frame includes secondary frame members that are pivotally connected to the peak frame members at a location spaced from the peak, and including a peak drawstring connected to a pull knob and to the peak, and still further including a retainer for holding the peak drawstring once tensioned, such that, when tensioned, the retainer holds tension on the peak drawstring and thus holds the peak frame members in an outward position when the top apparatus is in the expanded position.

18. The structure defined in claim 1, wherein the top internal frame includes a repeating pattern of oppositely angled top frame members and an associated peak frame member pivotally interconnected to form a repeating inverted "Y" shape, the Y-angled top frame members being pivoted to the bottom internal frame, and pivoted to each other, and pivoted to the associated peak frame member at an overcenter joint for movement between the collapsed and expanded positions, the angled and associated peak frame members moving overcenter when moved between the collapsed and expanded positions.

19. The structure defined in claim 1, wherein the internal top frame includes repeating pairs of angled top frame members that are pivoted to each other at a top end and pivoted to a top of the bottom internal frame to form a repeating pattern of inverted V shapes.

20. A quickly erectable structure comprising:

an expandable/collapsible top apparatus having a top internal frame and a flexible top cover attached to and supported by the top internal frame for movement between an expanded position and a collapsed position, the top internal frame including rigid top frame members pivotally attached together to define a peak where the top frame members extend radially from the peak, the top internal frame further including rigid right/lower and left/lower frame members pivotally attached to a bottom of each one of the top frame members at an overcenter joint, the right/lower and left/lower frame members forming an inverted "Y" shape with the associated top frame member when in the expanded position but forming a dense stack of substantially parallel frame members when in the collapsed position, a lower end of each right/lower frame member being pivotally attached to a lower end of the next adjacent one of the left/lower frame members so that, when expanded, the right/lower and left/lower frame members form a zigzag pattern around and spaced from the peak; and

a releasable support structure attached to the peak and each of the top frame members for selectively holding the top apparatus in the expanded position.

21. A quickly erectable structure comprising:

an expandable/collapsible apparatus having a plurality of interconnected X-shaped subframes that combine to form a telescoping scissor frame, a plurality of inverted Y-shaped subframes attached together and to a top of the telescoping scissor frame that combine to form an overcenter scissor frame attached across a top of the telescoping scissor frame, and flexible covers attached thereto;

the apparatus being positionable in a storage position where the telescoping scissor frame is collapsed into a compact cylindrical shape with the Y-shaped subframes positioned within the compact cylindrical shape, and positionable in a partially-expanded position where the telescoping scissor frame is expanded to define a self-supporting fence-like geometric wall

with the Y-shaped subframes positioned within the wall but not raised up, and positionable in a fully-expanded position where the Y-shaped subframes are raised above the geometric wall to define a dome over the geometric wall.

22. The quickly erectable structure defined in claim 21, wherein the Y-shaped subframes are removably attached to the X-shaped subframe.

23. A method of quickly erecting a structure comprising steps of:

providing an expandable/collapsible bottom apparatus and integrally attached expandable/collapsible top apparatus, the bottom apparatus including a near corner and two far corners;

grasping and throwing the far corners away from the near corner of the bottom apparatus to expand the bottom apparatus to a geometric wall shape; and

grasping and lifting the top apparatus to expand the top apparatus to form a roof over the geometric shape.

24. The method defined in claim 23, wherein the step of grasping and throwing and the step of grasping and lifting are separate and independent steps.

25. A method of quickly collapsing a structure comprising steps of:

providing an expandable/collapsible bottom apparatus and an expandable/ collapsible top apparatus, the bottom apparatus including a frame with top and bottom edges and a side, the top and bottom apparatus both being in an expanded position;

lowering and collapsing the top apparatus from the expanded position where the top apparatus acts as a roof over the geometric shape to a storage position within the bottom apparatus; and

collapsing the bottom apparatus from the expanded position where the bottom apparatus forms a geometric wall shape, the bottom apparatus, when collapsed, surrounding the top apparatus.

26. A quickly erectable apparatus comprising:

an expandable and contractible scissor frame including a repeating pattern of "X" subframes that are pivotally interconnected together at corners and pivoted internally at mid-points; and

a flexible material covering the scissor frame, the flexible material including slots and apertures reducing an actual outer surface area on the sheet to a maximum of about 70% of a total outer surface area.